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NOTES

THE EFFECTS OF SEED VIGOUR AND SALINITY ON THE GERMINATION OF SOYBEAN

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The ability of seeds to germinate under stress conditions is often taken as a reflection of seed vigour. Soybean seeds (cv. Williams) having a high germination but a range of vigour levels were produced by ageing at 15% moisture content for periods from 0 to 9 hours at 45°C before being set to germinate on paper towel at salinities of 0, 330 and 421 mMolal NaCl. Germination was counted after 8d, when any ungerminated seeds were transferred to filter papers moistened with distilled water for 7d. Conductivity of the leachates from individual seeds after ageing was also measured by a G2000 Seed Analyser. Seed germination differed both in its response to salinity and seed ageing and in its ability to recover from the stress period. In saline conditions seed germination was reduced and aged, low vigour seeds had lower germination than unaged seeds, but surprisingly there was no significant interaction between salinity and seed ageing. Seeds that failed to germinate in saline conditions were not however all dead, as a proportion of them subsequently germinated when transferred to water, with high vigour seeds showing the largest recovery in germination. The greater ability of high vigour seeds to recover from the effects of salinity was supported by the correlation ($r = -0.92$) between seed leachate conductivity and germination in the recovery period. Thus the importance of delivering high quality seeds lies not in their ability to germinate and emerge in stress conditions such as saline soils but in their ability to recover when the stress is removed.